

## REMARKS

In the Official Action of April 21, 2006, claims 1-27 were rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. Claims 1-27 were also rejected as being unpatentable over the cited Reilly publication "Investment Analysis and Portfolio Management ("Reilly"). Applicant respectfully traverses both rejections. In accordance with the requirements of 37 C.F.R. §§1.111(b) and 1.119, Applicant submits the following comments to distinctly and specifically point out the unsupported nature of this rejection.

In rejecting claims 1-27 under 35 U.S.C. 101 as being unpatentable because the claimed invention is directed to non-statutory subject matter, the Official Action stated that the claims do not provide a physical transformation but merely present steps of calculating a mathematical algorithm that does not produce a tangible result. It was further stated that an abstract mathematical algorithm is not considered patentable, and the Action made reference to the MPEP §§ 2106-2106.02.

In response to this §101 rejection, Applicant notes that the claims of the instant invention are directed to a method for computing a set of indexes describing the capital markets of an individual country or of multiple countries. The method involves defining and calculating indexes of desired sectors of the marketplace. These indexes are then weighted and combined into a single comprehensive index representing the entire marketplace. In order to compute an index of multiple countries, the individual country's asset classes are summarized, weighted and combined. The indexes are useful, concrete and tangible results which may be applied to measure overall financial market performance as well as provide metrics for individual market sectors. Applicant's claimed method defines indexes for individual market components, identifying the data necessary to calculate them, defining the method of weighting each index, and combining them into an index comprising several asset classes. The claimed invention provides a practical method and tangible results that are used by market analysts, investors, brokers and financial consultants to determine market stability or volatility, short and long term trends, and overall performance.

The MPEP provides a number of case holdings that illustrate the use of computer calculation to produce useful, concrete and tangible results as required by *Arrhythmia*, 958 F.2d at 1057, 22 USPQ2d at 1036. For example, *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601 indicates "[T]ransformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces 'a useful, concrete and tangible result' -- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." Further, there

are several issued United States patents which treat analogous subject material and utilize computational support to calculate results according to a defined and claimed method. For example, "Financial Risk Prediction Systems and Methods Therefore," U.S. Patent No. 6,119,103, Basch, *et al.*, issued September 12, 2000, describes a business model which examines credit card transaction data, scores each transaction based on a model and identifies those transactions that score below a predetermined threshold indicative of poor financial risk. These steps have strong parallels to the method claimed in the present patent application. Similarly, among numerous other such patents, one can consider:

"Graphical user interface for managing security in a database system." U.S. Patent No. 6,005,571, Pachauri, Issued December 21, 1999. This invention provides a method for managing security in a database system. The method includes producing a plurality of task groups, the task groups including actions that may be performed on the database. Functional roles are created from these task groups, and a security profile for a user is created by assigning to the user at least one functional role. Pachauri uses a set of rules to define groups composed of elements in the database. This set of rules and the constraints imposed on using elements of the data base are like numerous other computerized systems that produce specific, tangible and concrete results. In Pachauri, the results are security profiles created to focus functional roles to test the security of the data base.

"Inventory management strategy evaluation system and method." U.S. Patent No. 5,963,919, Brinkley, *et al.*, Issued October 5, 1999. This patent discloses a system and method for evaluating an inventory management strategy and combines multiple management strategies in a single inventory management system. The system analyzes the inventory portfolio on an item-by-item basis to assign the most suitable management strategy for that item.

Both of these patents, analogously to the present patent application, utilize existing databases, apply rules or weights, and yield specific, tangible and concrete results that enable beneficial decisions. Any set of rules embodied in a computer program may be called an algorithm. When the result of the application of the algorithm to a defined database yields a specific and tangible result, this result falls in the realm of patentable subject matter. The above-cited patents and cases involve use of computers to calculate specific and tangible results that represent useful and valuable tools in defined areas of analysis or investigation. By definition, a stored program in a computer is an algorithm, but it is necessary to look past the antecedent algorithm and identify the resulting application.

Categorizing the method and resulting indexes of the present invention as an "abstraction" or a mere performance of an "algorithm" because the method utilizes computer calculation to produce novel and specific indexes useful in market analysis and projection of values does not reach the significance of the resulting indexes. The method of the instant invention produces a number output (the indexes) in a parallel manner to that of the Basch *et al.*,

the '571, and the '919 patents cited above, all of which produce numerical output. These numerical outputs have all been found to be useful, concrete and tangible patentable results. It is respectfully suggested that the invention claimed herein is likewise useful, concrete and tangible and that the §101 rejection is therefore improper and should be withdrawn.

Turning now to the rejection of claims 1-27 under 35 U.S.C. 103(a) over Reilly, F.K., "Investment Analysis and Portfolio Management" 3<sup>rd</sup> Ed., the Dryden Press, Copyright 1989, pp. 165-170 (hereinafter, "Reilly"), the Official Action alleges (at the middle of page 3) that regarding claims 1-21 and 24-27 in the instant case, Reilly anticipates the inventive concept of the instant invention by providing a comprehensive list of combined market sector indexes. In particular, it is asserted that Reilly discloses "*Salomon Brothers International Bond and Money Market and Performance Indexes*" which provides a comprehensive measure of the total return of high quality securities in major international sectors of the bond and money markets that is market-value weighted. Attention was directed to Reilly, page 165, and it was further noted that on Reilly page 165 the "*Merrill Lynch-Wilshire Capital Market Index*" is disclosed. The Action emphasized that this Index is a *market value-weighted index that was created to measure the total return performance of the combined stock and bond indexes*. Attention was also directed to Reilly's comments on the importance of "diversity," the suggestion that countries have developed composite series which reflect the performance of all securities, and that world capital markets are becoming integrated—leading to world capital indexes (see Reilly, "*Composite Security Market Series*").

The Action alleged that it would have been obvious for one of ordinary skill in the art to integrate the *stock index* (Examiner's emphasis) of Merrill Lynch into the Salomon Brothers' index and/or the *money market index* of Salomon Brothers into Merrill Lynch because one of ordinary skill in the art would have been familiar with the notoriously old and well known concept of "*diversification*" (Examiner's emphasis) and thus have recognized the importance of diversification to provide a more integrated and comprehensive measure of the performance of capital markets of a country and/or various other countries. The Action continued by noting that the integration of various indexes would have been an obvious expedient well within the ordinary skill of the art and that an artisan of ordinary skill in the art would be familiar with the concept of a "balanced fund" or "asset allocation fund" which characteristically invests its assets into money markets, bonds, preferred stock and common stock with the intention to provide both growth and income. It was concluded that, since it is known in the art to provide indexes based upon various fund types, a balanced fund index (e.g., *Lipper Balanced Fund Index*) would be an obvious expedient well within the ordinary skill in the art. Claims 22 and 23 were also rejected under §103 on the argument that while Reilly fails to disclose that the indexes are calculated with a

computer and encoded in the memory of a computer, computers are widely used in making business calculations and thus official notice was taken of the use of computers for creating indexes.

In response to this rejection, it is first noted that the Action states that Reilly “anticipates the inventive concept of the [A]pplicant’s invention by providing a comprehensive list of combined sector indexes.” However, this statement was made in the context of a §103 rejection where the concept of “anticipation” is not relevant. Moreover, the reference to Applicant’s “inventive concept” is inappropriate because Applicant did not claim an inventive concept; instead, and in accordance with the requirements of §101 and §112 of the Patent Statute, Applicant claimed specific methods for composing indexes from a comprehensive set of asset classes, weighting said indexes to compose a master index, and utilizing that master index to analyze market performance.

With regard to the specifics of the §103 rejection, MPEP §2143 and its following amplification state that three criteria must be met to establish a *prima facie* case of obviousness: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success (... that the combination will be an effective improvement); and (3) that the prior art references, when combined, must teach or suggest all the claim limitations. Section 2143 adds that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not in applicant’s disclosure.

Considering first whether Reilly teaches or suggests the claim elements, reference is made to Reilly’s comment on the importance of “diversity” (page 165) and that

“...several firms have developed composite series that reflect the performance of all securities in a given country. These composite series attest to the importance of diversifying, not only among various segments of the equity market, *but also between equities and bonds* [emphasis added].”

Reilly therefore limits any concept of diversity to equities and bonds. Thus, the “diversity” that Reilly suggests is confined at most to equities and bonds and does not reach inclusion of equities, bonds **and** the money market and liquidity instruments recited in the claims of the instant application. Further, none of the indexes referenced by Reilly show the complete inclusion of market sectors of the instant invention. Reilly’s suggestions do not teach all the claim limitations of the instant invention and specifically do not teach the diversity that characterizes the claimed invention as exemplified by the recitation of the stock, bond and money market sectors indexed in claims 1 and 7 of the instant application, or the method recited in claim 25 for computing a multi-country index to approximate the activities of the securities in the marketplace of the countries.

The description of the Salomon Brothers International Bond and Money Market Performance Indexes describes a domestic bond series, a Eurocurrency bond, and a domestic money market security in local currency terms and in United States dollar terms for each of eight major countries. There is also a market value-weighted and an unweighted composite world bond index. There is no equities content in these indexes (Claim 1 of the instant invention specifically recites, "obtaining a current index of each of the stock ... sectors of the market place (claim 7 also affirmatively recites determining a stock index for a country).

To further illustrate the lack of a showing of the differences between the claimed invention and the cited art, none of the Indexes described in Reilly or, so far as is known, any other index, computes an index for each of the stock, bond and money market sectors and then combines these indexes into a single index describing the overall capital market as recited in the last elements of claims 1 and 7 of the instant invention. The claims of the instant application go even further over the prior art indexes by specifically reciting that the indexes for each of the stock, bond and money market sectors are weighted and that it is the weighted indexes that are combined. The combining of weighted indexes for each of the stock, bond and money market sectors is not disclosed in any of these known prior indexes.

Drawing attention to the specification of the instant application on page 12, line 9 in the Paragraph beginning, "Referring back to Fig. 1, ..." a set of four methods are described detailing the construction of weights applied to the bond, money market and equity indexes of the instant application and for combining these weighted components into the master capital market index. None of these methods are recited in the Reilly references and there is no mention in those references that would suggest to a person skilled in the art that such weights should be constructed or utilized.

Salomon Brothers have changed hands and is now owned by Citigroup. The current definition of the Citigroup Broad Investment Grade Index gives some insight into the weighting process which is used:

Salomon Broad Investment Grade Bond Index measures the monthly total rate-of-return for all Treasury/agency securities, investment-grade corporate bonds (BBB-/Baa3 or better by either Standard & Poor's or Moody's) and mortgage pass-through securities. All issues must have a maturity of one year. For inclusion in the index, US Treasuries must have a minimum outstanding of at least \$1 billion; corporate/government-sponsored must have a minimum outstanding of \$100 million; and mortgages \$1 billion. Treasuries are dropped if the amount outstanding falls below \$1 billion; corporate/government-sponsored exit at \$75 million; mortgages at \$1 billion. Each issue is individually Salomon trader-priced on the bid side at the month-end. The index is market value-weighted. Total returns include price change, principal payments, coupon payments, accrued income and reinvestment income on intra-money cash flows. Coupon interest is put into 30-day T-bills until month end when it is reinvested in the same issues.

The index is reweighted monthly, but there is no description of weighting each of the stock, bond and money market sectors as recited in the last elements of Applicant's claims 1 and 7.

Another important distinction between Reilly's citation of the Salomon Brothers Indexes is that these Indexes for each of the eight countries contain a domestic money market security and bonds but do not include the equity market sector like the indexes claimed in the instant invention. To illustrate how these differences are not disclosed in Reilly, although the Salomon Brothers Indexes for each of the eight countries contain a domestic money market security and bonds, they do not include the short term liquidity (money market) market sector like the invention recited in claims 13 and 27. Therefore, neither the indexes cited in Reilly, nor Reilly itself, constitute a *prima facie* showing of the differences between the claimed invention and that which is known in the art.

Further, the indexes disclosed in Reilly, when put together, are either unweighted or weighted. The indexes also falsely assume that the market is represented by just those securities that are being selected for measurement. The criteria for bond inclusion in the index (summarized above) limit content to a small percentage of the upper portion of the market in contradistinction to the broader representation of the indexes of the instant invention as recited in claims 11 and 26. Neither Reilly nor any description of the Salomon Brothers or Citibank indexes teaches any criteria for the use of the unweighted (as opposed to the weighted) indexes or how either or both may be applied to measure overall market performance in the chosen sectors. Further, nothing in Reilly teaches how to improve the Salomon Brothers Indexes to include short term liquidity, i.e., the equity sector, to achieve the comprehensive index claimed in the instant invention.

The Indexes claimed in the instant invention use governmental statistics to standardize the indexes as recited in claims 11 through 15 and 18. For instance, the methodology of the claimed invention also eliminates the double counting of financial instruments. Neither of these elements is taught in Reilly.

Additionally, issuance records kept by the Federal Reserve System which track the total amount outstanding not just those securities being counted in the index tabulation may be utilized in the instant invention. The Federal Reserve accounting system is superior to that utilized in the indexes discussed by Reilly in that it has been utilized longer than either the Salomon or Merrill Lynch Indexes. There is no suggestion in Reilly that the Salomon or Merrill Lynch Indexes could be improved by using Federal Reserve system data and accounting. Teaching the use of the Federal reserve system to standardize the weights for the financial sectors used is also not taught by the authors of the Salomon or Merrill Lynch indexes.

Detailed scrutiny of the Merrill Lynch-Wilshire Capital Markets Index (MLWCMI) illustrates the differences between this index and the indexes of the instant invention and how the instant inventions methods correct errors found in the MLWCMI. The MLWCMI is basically a combination of the Merrill Lynch fixed-income indexes and the Wilshire 5000 common stock index. The MLWCMI tracks approximately 10,000 stocks and bonds. This is a subset of the instruments tracked by the indexes of the instant invention in the bond and equities sector and does not include the money market sector.

The market makeup, as of June 30 1987, of the MLWCMI is depicted in the following data table published by Merrill Lynch.

<u>Security</u>	<u>\$ in Billions</u>	<u>Percent of Total</u>
Treasury Bonds	\$1,085	20.94
Agency Bonds	166	3.19
Mortgage Bonds	467	8.81
Corporate Bonds	453	8.74
OTC stocks	331	8.74
AMEX stocks	105	6.38
NYSE stocks	<u>2,586</u>	<u>49.92</u>
	\$5,193	100.00

Upon examination, the above table is found to contain incorrect percentage calculations. For instance, The Merrill Lynch calculation of the OTC stock percentage is 8.74%. The correct number is 6.38% as shown in the corrected table immediately below. There is a difference of 2.63% between the Merrill Lynch table and the table with corrections. In terms of the total of \$5,193 Billion, this difference represents \$122.55 Billion. Therefore, the Merrill Lynch table as presented cannot be relied upon as accurate and cannot serve as the basis for any teaching of composition of financial indexes. The table below using the same asset values contains the correct "Percent Of Total" numbers.

<u>Security</u>	<u>\$ in Billions</u>	<u>Percent of Total</u>
Treasury Bonds	\$1,085	20.90
Agency Bonds	166	3.20
Mortgage Bonds	467	8.99
Corporate Bonds	453	8.71
OTC stocks	331	6.38
AMEX stocks	105	2.02
NYSE stocks	2,586	49.80
Equity Securities	<u>3,022</u>	<u>58.20</u>
	\$5,193	100.00

The Index of the claimed invention and the methodology taught in the instant invention applied to the same security classification produces the following percentage weights:

<u>Security</u>	<u>\$ in Billions</u>	<u>Percent of Total</u>
Treasury Bonds	\$ 993	18.09
Agency Bonds	168	3.06
Mortgage Bonds	523	9.53
Corporate Bonds	747	13.60
Equity Securities	<u>3,059</u>	<u>55.72</u>
	\$5,490	100.00

The differences between the two methods are represented in the table below. The differences are the result of the the Index of the instant invention standardization process as recited in Claims 5, 15, 18, 20 and independent claim 23 which the Merrill Lynch methodology, like the Salomon Brothers Indexes, does not utilize and thus can not teach.

<u>Security</u>	<u>Merrill Lynch Percent of Total</u>	<u>Applicant's Invention Percent of Total</u>	<u>Difference (ML-CPMKTS)</u>
Treasury Bonds	20.90%	18.09%	2.81%
Agency Bonds	3.20	3.06	.14
Mortgage Bonds	8.99	9.53	-.54
Corporate Bonds	8.71	13.60	-4.89
Equity Securities	<u>58.20</u>	<u>55.72</u>	<u>2.48</u>
	100.00%	100.00%	0.00%

Further, the method of the present invention includes liquidity securities, and therefore results in the following dollar amounts and percentage weights:

<u>Security</u>	<u>\$ in Billions</u>	<u>Percent of Total</u>
Treasury Bonds	\$ 993	14.56%
Agency Bonds	168	2.46
Mortgage Bonds	523	7.67
Corporate Bonds	747	10.96
<b>Liquidity Securities</b>	1,328	19.48
Equity Securities	<u>3,059</u>	<u>44.87</u>
	\$6,818	100.00%

The differences between the two methods are represented in the below table. The differences are the result of the Index of the instant invention's use of the standardization process of claims 5, 15, 18, 20 and independent claim 23, which the Merrill Lynch methodology does not have.

<u>Security</u>	<u>Merrill Lynch Percent of Total</u>	<u>Applicant's Invention Percent of Total</u>	<u>Difference (ML-CPMKTS)</u>
Treasury Bonds	20.90%	14.56%	6.34%
Agency Bonds	3.20	2.46	.74
Mortgage Bonds	8.99	7.67	1.32
Corporate Bonds	8.71	10.96	-2.25
<b>Liquidity Securities</b>	0.00	19.48	-19.48
Equity Securities	<u>58.20</u>	<u>44.87</u>	<u>13.33</u>
	100.00%	100.00%	0.00%



These differences are considerable and render the MLWCMI a less accurate and thus less valuable tool for analysis of overall market performance than the indexes of the instant invention. The use of incorrect weights and a deficient roster of securities reflects a flawed and incomplete suggestion of "diversity." As set out in MPEP §2143, both a suggestion or teaching to make the claimed invention and a likelihood of success must be found in the art, and these deficiencies clearly show that the Reilly reference does not include a suggestion or motivation to modify the reference or to combine its teachings to establish a methodology as complete as claimed in the instant invention. Success can not be expected utilizing incorrect percentages and weights as are shown in the above tables.

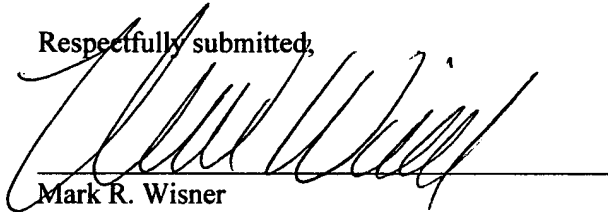
The Lipper Balanced Fund Index referenced in Reilly measures the performance of funds and not individual securities in the capital market. This Index tracks funds whose primary objective is to conserve principal by maintaining, at all times, a balanced portfolio of both stocks and bonds. Typically, the stock/bond ratio ranges around 60%/40%. This Index is one of twenty-two (22) Lipper Indexes. None of the Lipper funds shows the combination of securities claimed in the instant invention. Additionally, the Lipper funds are managed subjectively by portfolio managers who do not use any particular systematic index references. Therefore, these funds do not contain all the elements that obviate the claims of the instant invention. The Reilly reference does not teach or claim all of the claim limitations of the instant invention. There is no teaching or suggestion in Reilly or in the example of the Lipper Balanced Fund Index to make the claimed combinations of the instant invention.

Funds are collections of various securities and specialize in certain types or categories of securities. Fund elements can be chosen from stocks, bonds or other securities. There are many kinds of stock funds. Examples include growth funds, which buy shares of burgeoning companies; sector funds, which buy shares of companies in a particular sector such as technology, utilities, mining, healthcare, biotechnology or telecommunications. or health care, and index funds, which buy shares of every stock in a particular index, such as the S&P 500. There are also many types of Bond funds. These include government bond funds, higher risk investments based on high-yield bond funds, also known as junk bond funds, and funds including municipal bonds whose interest earnings is tax free. Mutual funds pool money from hundreds and thousands of investors to construct a portfolio of stocks, bonds, real estate or other securities, according to its charter. Funds are managed with different styles and most of them are managed subjectively. In addition, over time, different portfolio managers will manage the funds so there is no consistency in fund holdings. Neither Reilly nor the indexes listed in Reilly make any attempt to account for all the securities in the marketplace, let alone to standardize the different types of securities that may be included in a given fund.

In summary, neither Reilly nor the indexes listed in Reilly teach the computation of an index that is based on the breadth of securities classes recited in the claims of the present application. No artisan of ordinary skill in the art has taken the initiative to define the diversified asset classes of the instant invention, combine those asset classes using weights as defined in Applicant's claims, or to integrate the sets of indexes with the accuracy and ability to track each sector of the markets in real time as Applicant's claimed invention for the purpose of tracking and/or analyzing overall market performance. It is therefore respectfully suggested that the Action does not establish a proper *prima facie* showing of the obviousness of the differences between the claimed invention and the prior art and that the rejection of the claims in this case should be reconsidered and withdrawn.

Entry of the above amendments to the claims and the new claims, consideration of the remarks set out herein, allowance of the claims, and passage of the application to issuance are all respectfully requested. In the unforeseen event that there are questions and/or issues yet to be answered in this application, it is respectfully requested that Applicant's Attorney be contacted at the address and phone number set out below.

Respectfully submitted,



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Date: August 21, 2006